



OUR PASSION FOR
CLEAN ENERGY

ELECTRICAL POWER
DISTRIBUTION TECHNOLOGY FOR
PHOTOVOLTAIC PLANTS

hensel-electric.de

HENSEL

A STRONG BRAND.

We win as a team, because every single one of us makes a substantial contribution with our commitment, actions and attitude: for our customers, suppliers and partners – worldwide.

We use our long-term solution competence to set new standards again and again. And do so as a family-owned business - as HENSEL.



PHILOSOPHY

WITH PASSION AND ENERGY, WE ENSURE SAFE CONNECTIONS, SO THAT LOW-VOLTAGE ELECTRICAL POWER IS MEANINGFULLY DISTRIBUTED.



MORE THAN 90 YEARS OF EXPERIENCE – YOUR ELECTRICAL ENERGY POWERS US

HENSEL is a leading, internationally operating provider of electrical installation and distribution systems for the safe distribution of electrical energy in challenging environments.

Many installation challenges in commercial and industrial buildings, in outdoor applications, in transport infrastructure systems and in photovoltaic installations are reliably solved thanks to HENSEL products.

Above all, it is the electrical industry and electrical plant construction companies that use HENSEL branded products and value our company's technical competence.

Cutting-edge production processes for maximum quality

State-of-the-art plastics processing and advanced metal and surface coating production processes are a technical requisite for our high-quality electro-mechanical products.



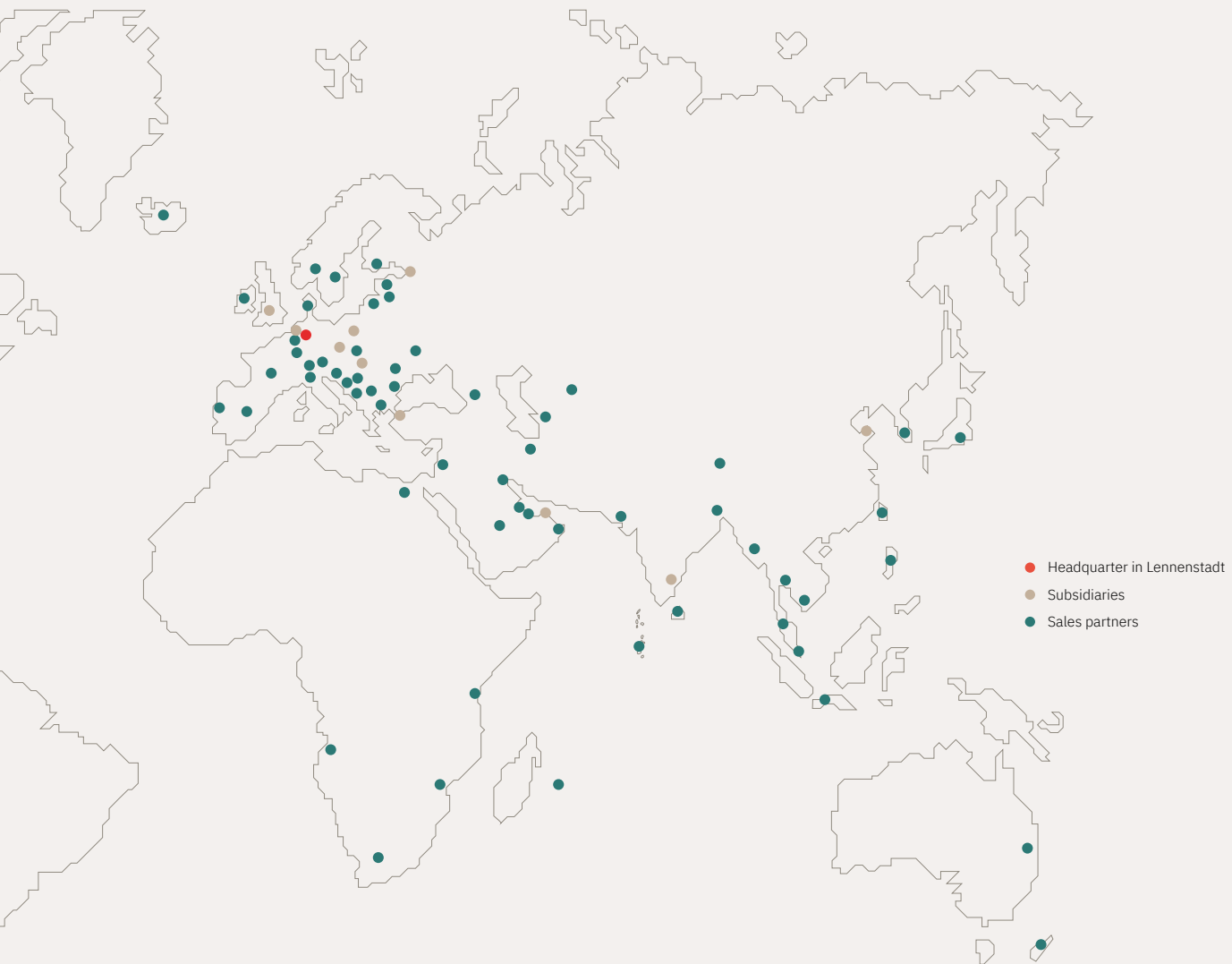
FAMILY
COMPANY



SINCE
1931

International presence

HENSEL guarantees local support and a high degree of availability thanks to its 4 locations in Germany, 10 subsidiaries and 60 international partners.



MORE THAN 60 INTERNATIONAL PARTNERS



ELECTRICAL INSTALLATION AND DISTRIBUTION SYSTEMS



850 EMPLOYEES



13 SUBSIDIARIES NATIONALLY AND INTERNATIONALLY



SOLAR POWER – THE ENERGY OF THE FUTURE!

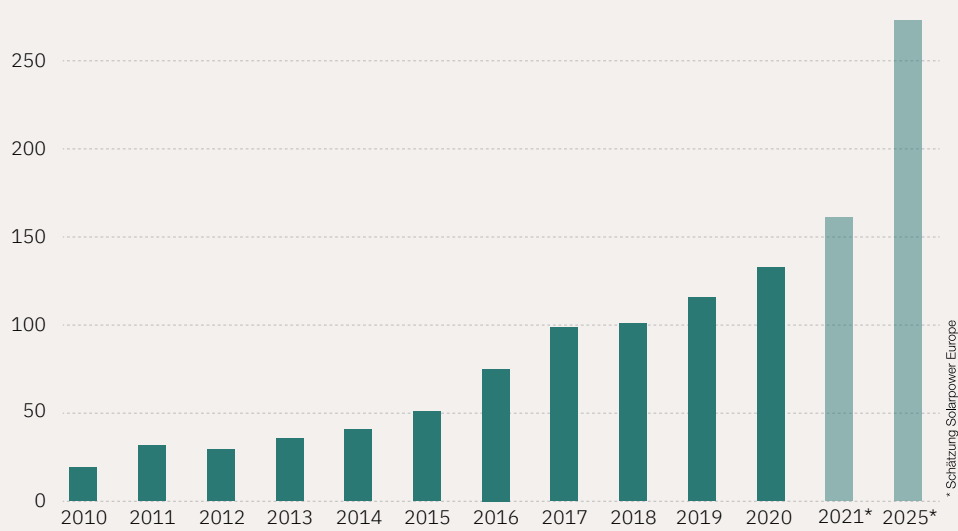
Renewable energy is becoming increasingly important. Just in one single day, the sun provides the earth with 3,000 times more energy than we need, making it an inexhaustible source of energy.

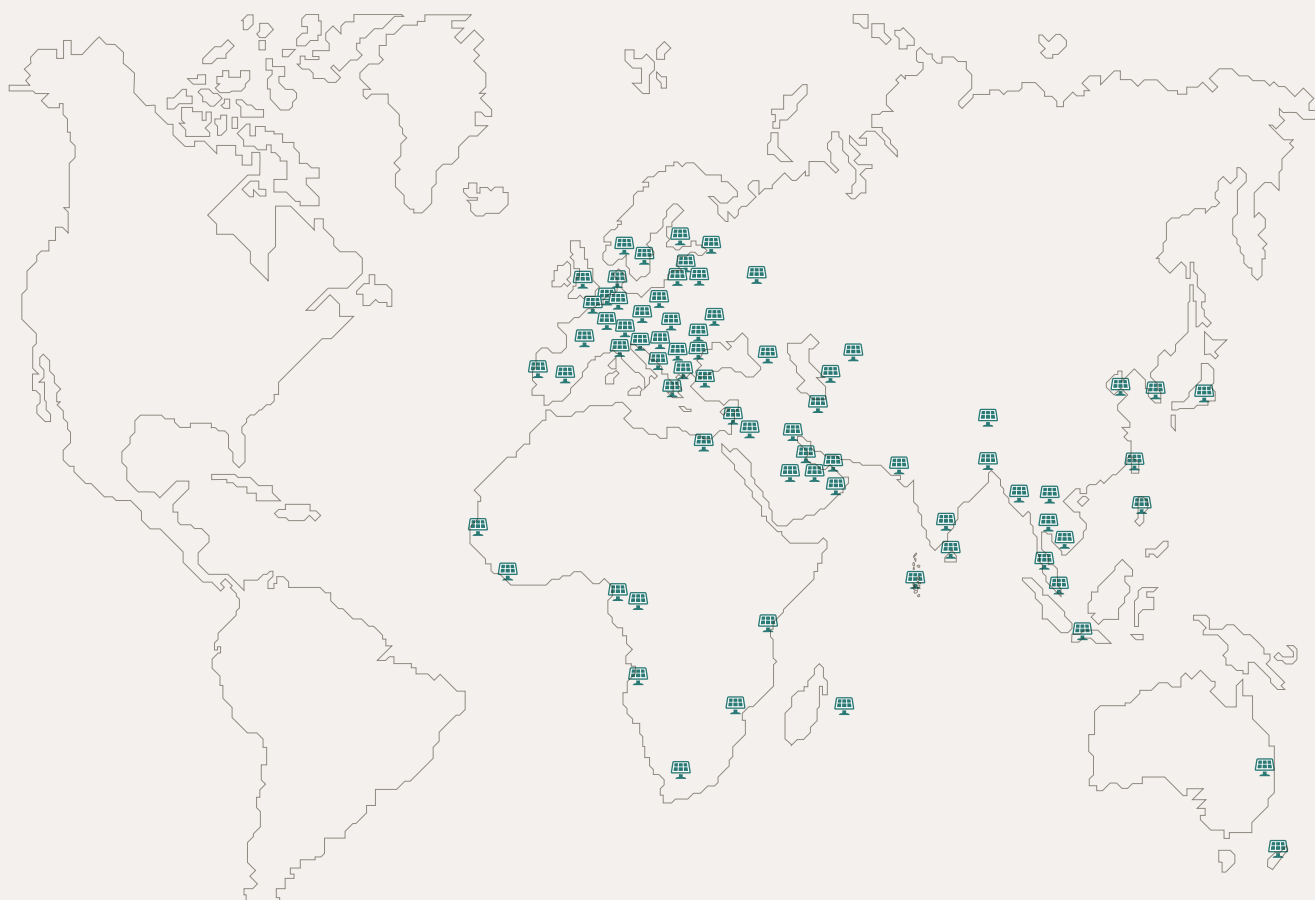
The energy emitted from the sun accounts for 850 to 1,200 kWh/m² a year, depending on the location. The closer to the equator, the more energy is emitted.

Safe, clean and environmentally friendly energy is required on all fronts. For more than 10 years, the production of solar power has risen globally, with the annual growth of new installations reaching more than 100 GW, with an upward trend.



GLOBAL PHOTOVOLTAIC GROWTH IN GIGAWATTS





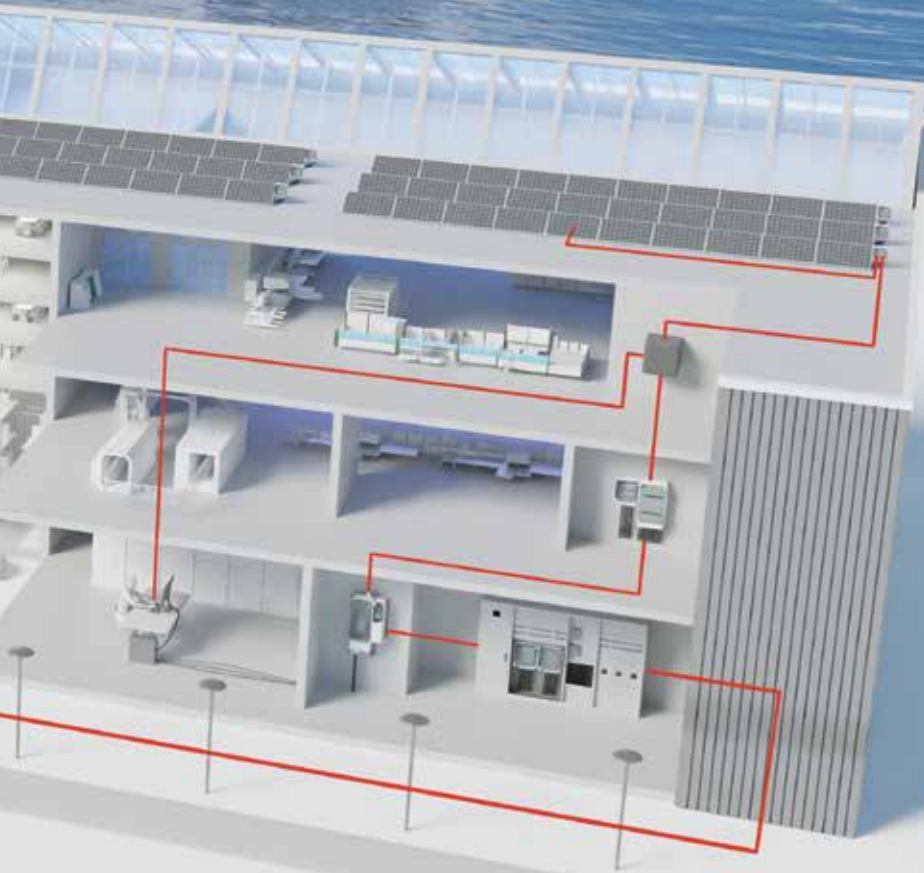
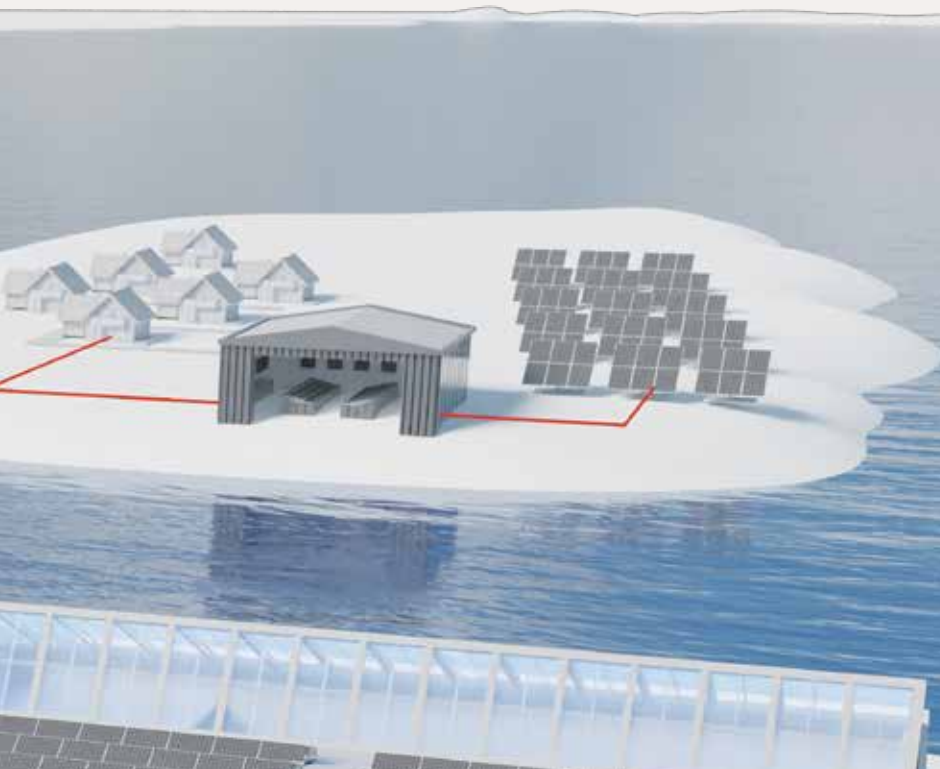
Photovoltaics – Over 10,000 projects in more than 60 countries

HENSEL products are used globally in electrical installation and distribution technology, mostly in demanding environments.

To date, HENSEL technology has been used in more than 10,000 PV projects with further projects underway. Over 10 years of experience in the area of photovoltaics and more than 90 years of expertise in the field of electrical installation and distribution systems ensure the successful and sustainable implementation of our projects.

OUR PRODUCT SOLUTIONS FOR CLEAN ENERGY





A BIOGAS PLANTS/SMALL WIND TURBINES

- HENSEL products can also be used for energy production via biogas and small wind turbines

B OUTDOOR INSTALLATIONS

- Large PV systems
- Alignment towards the sun
- Solar trackers

C DISCONNECTION UNIT + SWITCHGEAR ASSEMBLY

- Connecting generator plants to a low-voltage grid
- Standardised solutions (ready for use)
- Individual solutions

D ROOF INSTALLATIONS

- Most popular type of installation
- Optimal alignment on flat roofs

E OFF-GRID

- Energy production in areas with no power grid
- For village electrification and for water supply

F PV GENERATOR JUNCTION BOX + PV POWER INVERTER COLLECTOR

- Connecting solar modules to the power inverter (ready for use)
- Connecting power inverters to isolation units (complete sets)
- Standardised solutions
- Individual solutions

WHERE ROOF SURFACES BECOME SOLAR POWER PLANTS





To ensure maximum system availability, the total output is distributed between several power inverters.

Individual product solutions ensure a reliable distribution of electricity.



Special challenges

- + Interference in solar radiation resulting from roof slopes, roof aspects and shade from neighbouring buildings
- + Limited roof surface, most components are installed outside
- + Smaller PV installations

Our solution

- + Quick and easy to install
- + UV-resistant products suitable for installation in outdoor spaces
- + A high IP protection class ensures protection against dust and humidity
- + Protection Class II ensures safety of unskilled personnel
- + Individual product solutions

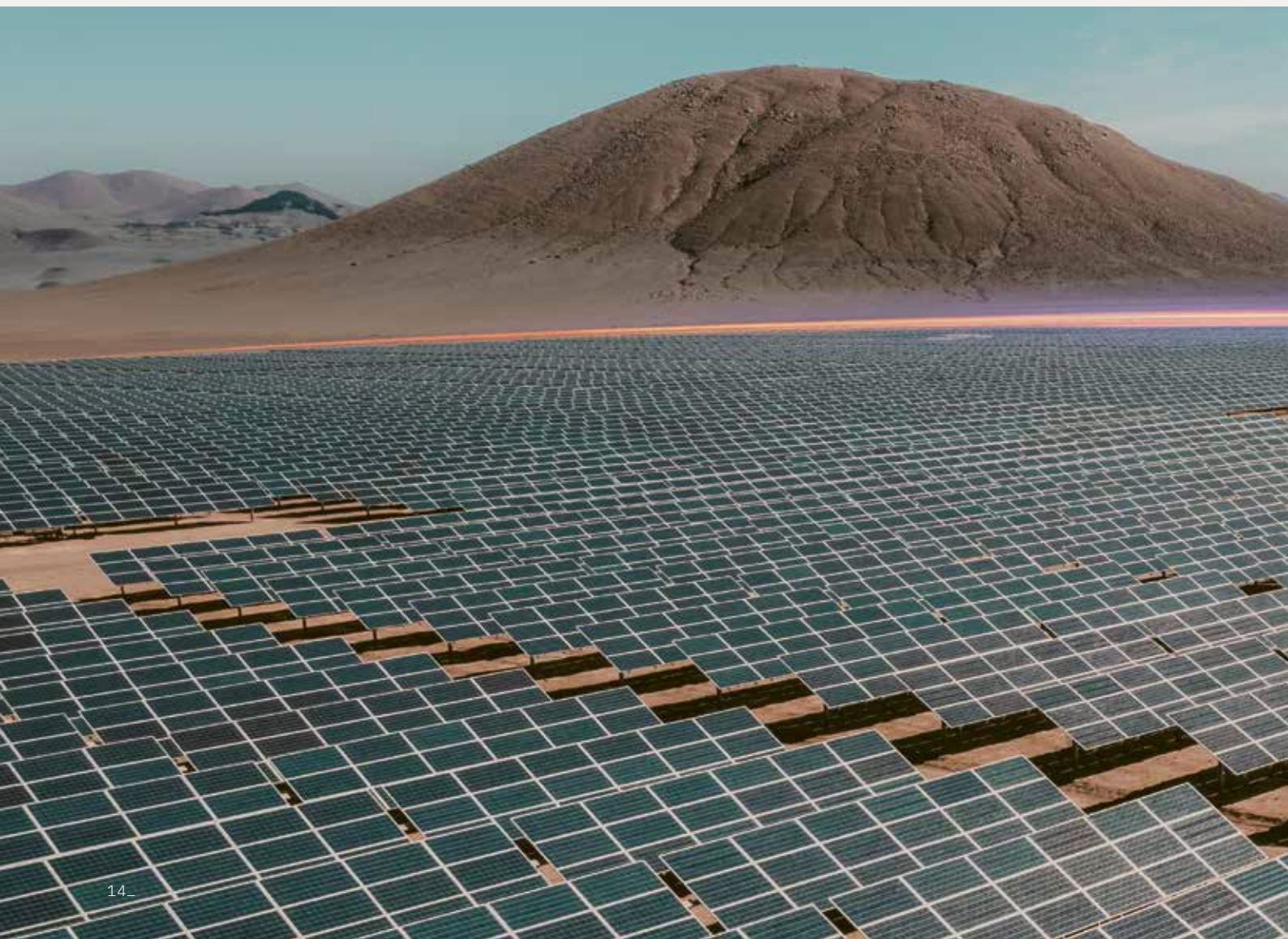
WHERE NATURE AND SOLAR POWER MERGE

Special challenges

- + High solar radiation
- + High temperature differences
- + Different climatic conditions
- + Large size of the plant makes on field maintenance a costly affair

Our solution

- + Maintenance-free products thanks to high quality
- + UV-resistant products suitable for installation in outdoor spaces
- + The high IP protection class ensures protection against dust and humidity
- + Ventilation inserts prevent water condensation





Individual product solutions with integrated string monitoring for a large PV plant ensure the reliable distribution of electricity in Thailand.



Numerous solar trackers in a solar park in Újszilvás (Hungary) generate 635,000 kWh a year. The power inverters were connected using individual HENSEL product solutions.





WHERE CARS PARK OUTSIDE

Special challenges

- + The main difference between a PV carport and a typical unit in an outdoor space is that the PV generators are installed higher in order to make space for cars to park. The lightweight structure with PV modules forms the roof.
- + Heat from car engines and dust from exhaust gases

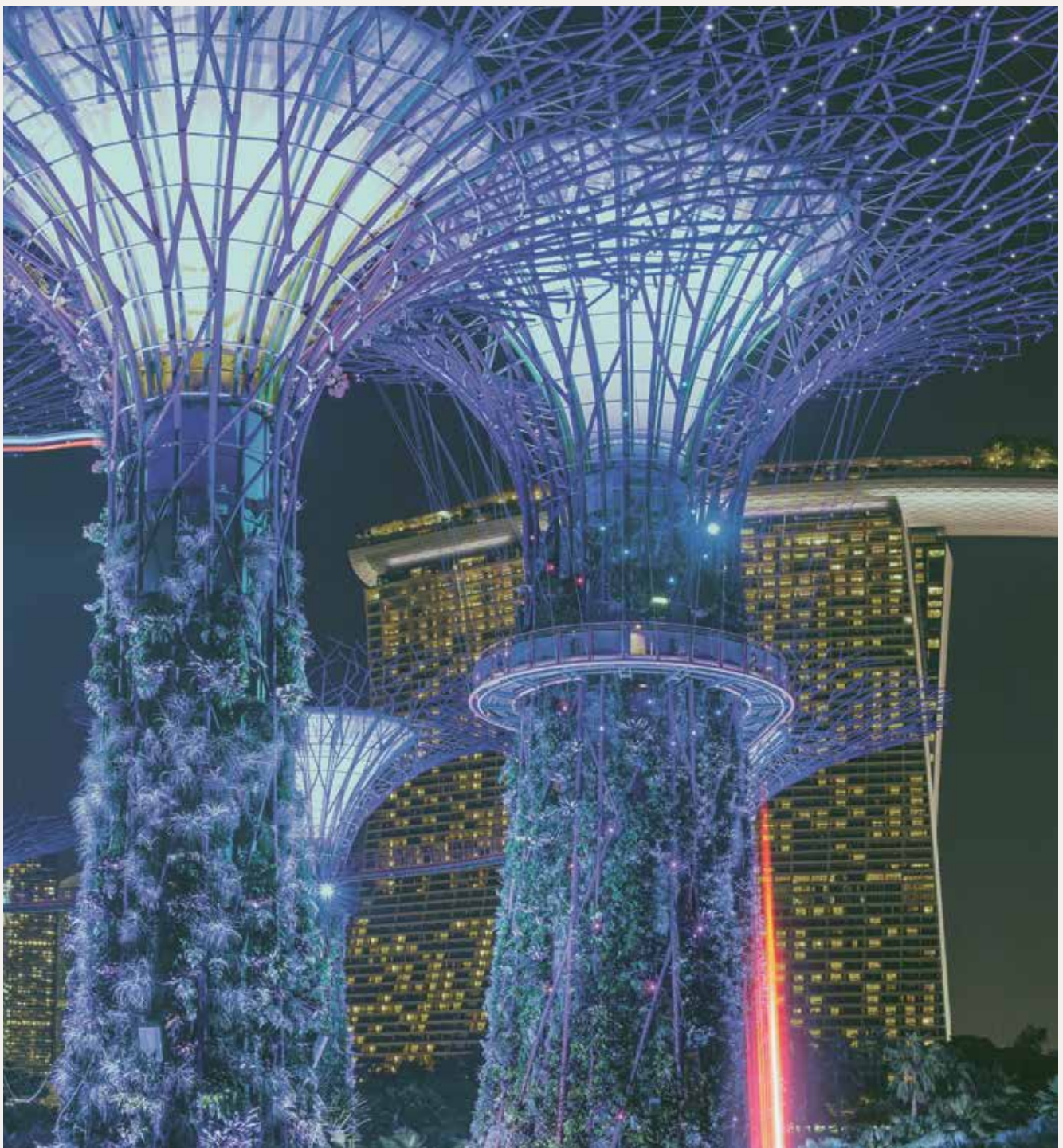
Our solution

- + Solutions with transparent covers allow you to see the installed components without having to open the cover
- + Lightweight and easy to install
- + Resistant against extreme temperatures
- + Protection class II ensures the safety of employees on site



Numerous HENSEL PV generator junction boxes ensure a reliable distribution of generated PV electricity.

WHERE SOLAR POWER BECOMES ARCHITECTURE





Numerous PV generator junction boxes are installed on the roof of the Marina Bay Sands Hotel.

PV power inverter collectors are installed on the Supertrees in Singapore.



Special challenges

- + Photovoltaic systems can also be integrated into or onto modern and architecturally challenging buildings. The installation is integrated as part of the architecture thanks to individual solutions.
- + The PV installations are exposed to all types of weather conditions.
- + Access to the PV installation is restricted for regular maintenance cycles.

Our solution

- + High level of customization possible
- + Resistant against UV and extreme temperatures
- + Maintenance-free products that are high in quality

WHERE PHOTOVOLTAICS IS GETTING BIGGER AND MORE IMPORTANT

Special challenges

- + Already installed photovoltaic plants are to be expanded
- + Limited space for the expansion

Our solution

- + Simple expansion of the installation via the Mi system's modular function
 - ready for use or planned product solutions
 - individual product solutions
- + Simple, hassle-free installation on site





PV distribution boards before the expansion of a plant in Chennai, India.



PV distribution boards after the expansion of a PV plant in Chennai, India.





WHERE SOLAR ENERGY MAKES YOU INDEPENDENT

Special challenges

- + Remote installations
- + Shortage of qualified maintenance personnel
- + Detailed individual system design and sizing for each project

Our solution

- + High-quality, reliable and maintenance-free solutions
- + Isolated products that guarantee the safety of untrained operators
- + Individual product solutions



Electrification of a village in Liberia with PV generator junction boxes, PV power inverter collectors and battery distributors for protecting battery banks



Electrification of railways with a power supply in the Congo

WHERE SOLAR ENERGY MAKES LIFE POSSIBLE



PV distribution boards close to a water source in the desert for a network-independent water pump system



Special challenges

- + Remote installations
- + Shortage of qualified maintenance personnel
- + Detailed individual system design and sizing for each project

Our solution

- + High-quality, reliable and maintenance-free solutions
- + Isolated products that guarantee the safety of untrained operators
- + Individual solutions for protection against dust and humidity

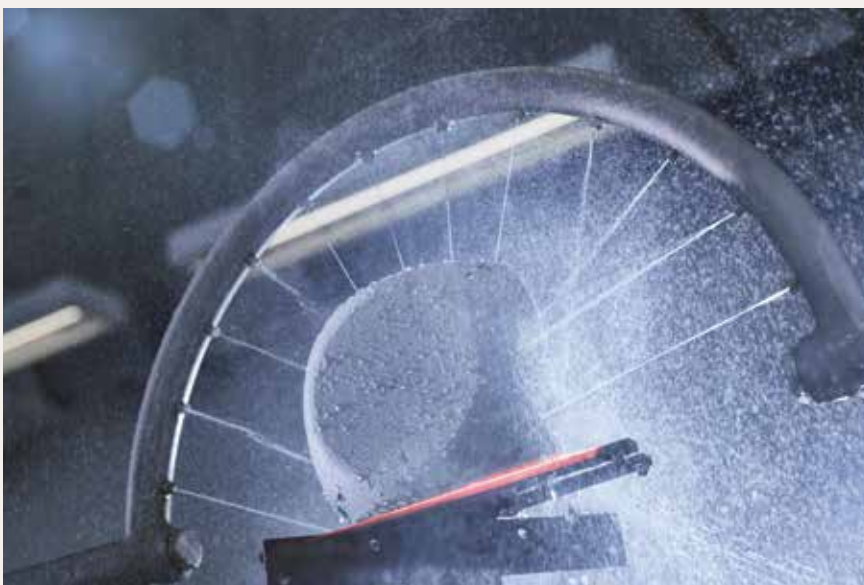
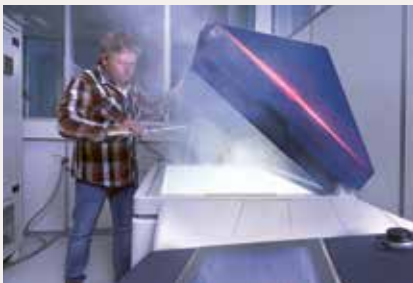
MODERN TEST METHODS – HENSEL STANDS FOR CERTIFIED QUALITY.

Places with dusty and humid environmental conditions that pose great challenges to electrical installation require products of the highest quality for the reliable distribution of electrical power in the low-voltage range.

- + Durability of plastic materials
- + Tests on electromagnetic susceptibility (EMC tests)
- + Fire behaviour
- + Limits of temperature rise
- + Functional tests
- + IP degree of protection (dust and water protection)
- + Impact resistance
- + Temperature resistance
- + Corrosion resistance
- + Dimensions check via structured light projection



VDE-certified test laboratory





HIGH QUALITY STANDARDS GUARANTEE THAT OUR PARTNERS HAVE THE CRUCIAL COMPETITIVE EDGE:

- _ Certified quality standard according to DIN EN ISO 9001:2015 for all production sites of the HENSEL Group.

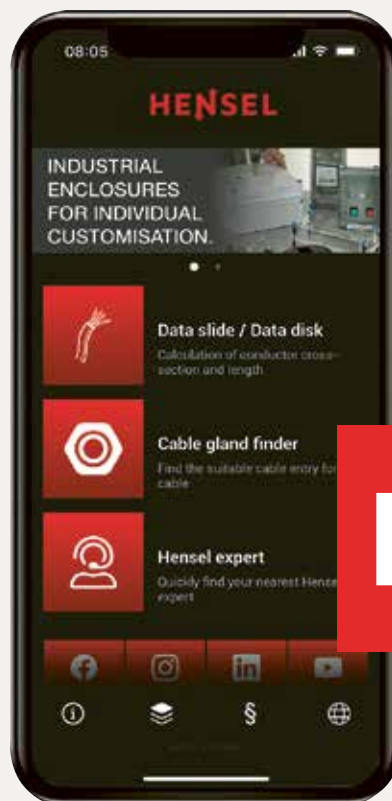
- _ Lean processes and efficiently positioned for the future. Continuous optimization: Lean management / HENSEL PEP system

- _ Safe manufacturing processes:
 - . Occupational Health and Safety
 - . Energiemanagement nach DIN EN ISO 50001
 - . Environmental management according to DIN EN ISO 14001

ENYEXPERT – MORE KNOWLEDGE IN YOUR HAND

Always be up-to-date on the go. In addition to useful information, the HENSEL app offers simple and practical tools to make your everyday work easier.

- + **Data slide / data disc**
Determination of conductor cross-section and length
- + **Cable gland finder**
Find the suitable cable entry for your cable
- + **HENSEL expert**
Quickly find your nearest HENSEL expert



AVAILABLE FOR ANDROID AND
IOS (FREE OF CHARGE)



ANDROID
Scan QR-Code



IOS
Scan QR-Code

SERVICE@HENSEL – DIGITAL, ANALOGUE AND ON SITE

In addition to the ENYEXPERT app, HENSEL offers other useful and innovative tools that significantly facilitate the everyday work in the electrical trade:



+ MY HENSEL-BOX

Your Logo on the HENSEL-box

Use the HENSEL-box as a business card for your installation services



Please contact your HENSEL expert:
hensel-electric.de

+ ENYGUIDE

The 3D Configurator for Mi- and ENYSTAR distribution boards

Whether as a 2D drawing or as a three-dimensional image – The intuitive 3D planning tool ENYGUIDE supports electrical specialists in the planning, project planning and ordering of HENSEL ENYSTAR and Mi Distribution boards.



More:
enyguide.de

+ CALCULATION TOOL

for the verification of the permissible temperature rise

The online tool for quickly and easily determining the power loss.



+ PORTAL 61439

The platform with all information about design and assembly according to IEC 61439 / EN 61439.



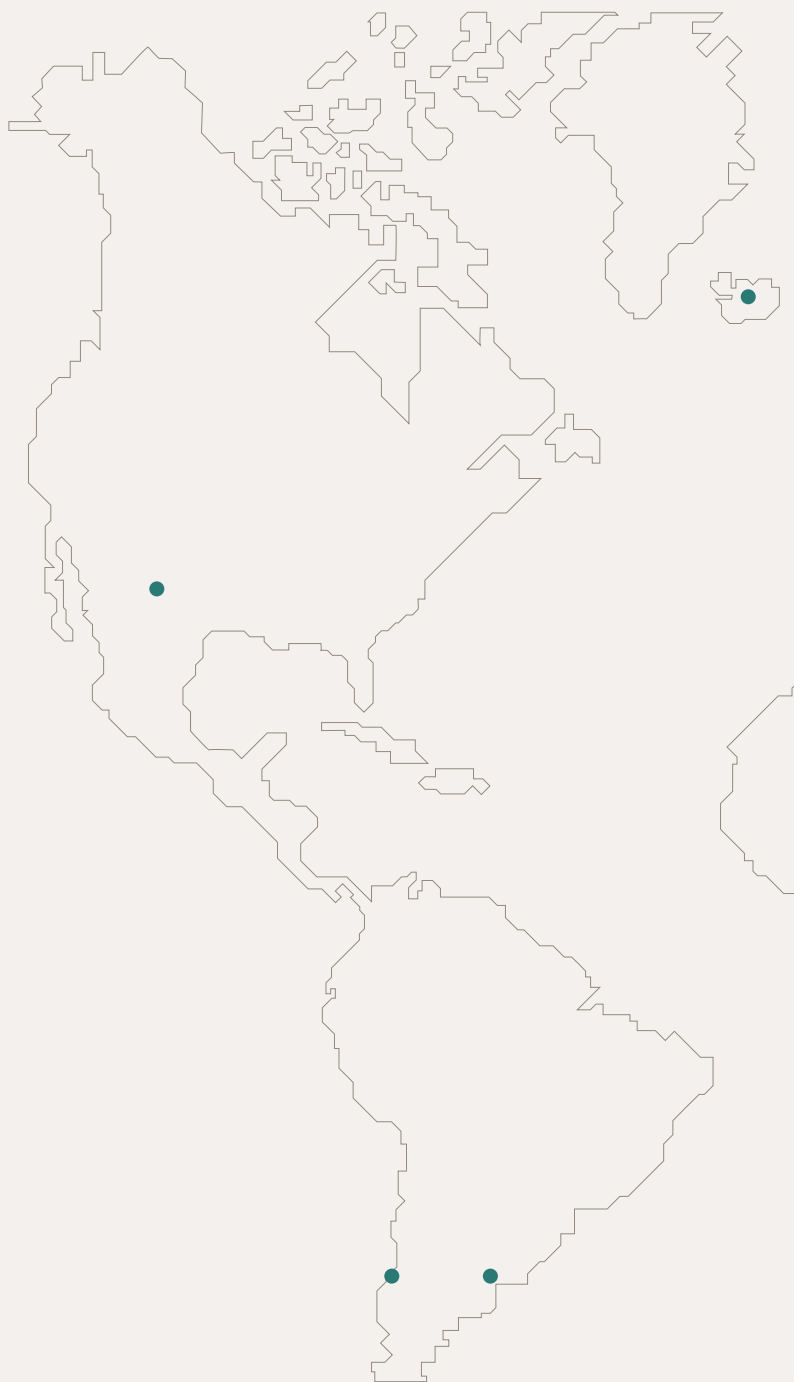
WE PROVIDE YOU WITH PROJECT SUPPORT!

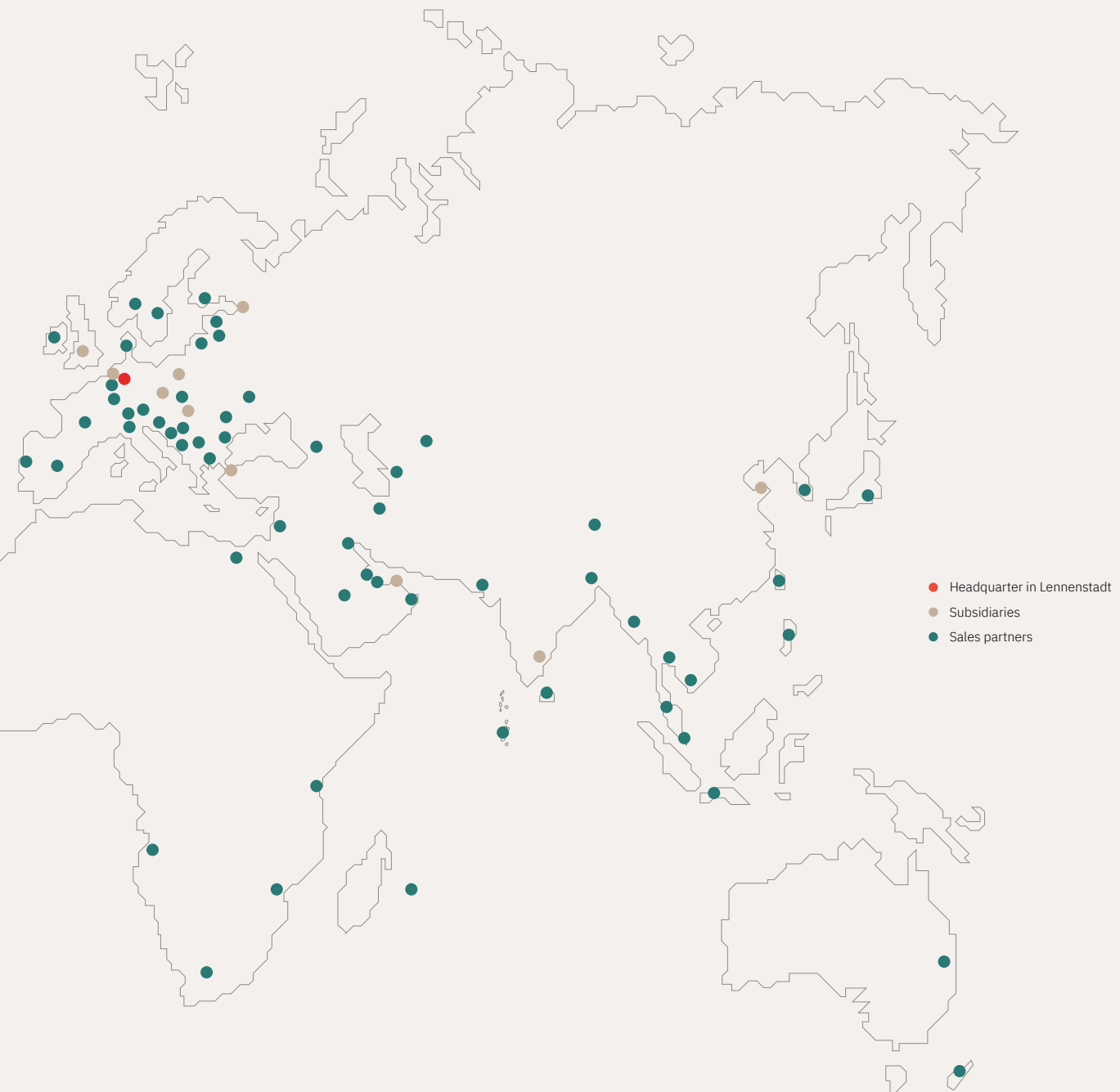
HENSEL maintains a close-knit network of technical field offices, distribution bases, subsidiaries and foreign representative offices throughout the world.

Please scan the QR code or see our website

www.hensel-electric.de

to get detailed information.





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